



DEPARTMENT OF ENVIRONMENTAL QUALITY  
DIVISION OF WATER QUALITY

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October 23, 2000

Mr. Stephen Flechner, President  
North Lily Mining Company  
1800 Glenarm Place Suite 20  
Denver, CO 80202

Subject: Response to Post-Closure Fluid Management Draft Plan (NOV & Docket Nos. UGW20-03 & UGW20-04)

Dear Mr. Flechner:

We have received the draft Post-Closure Fluid Management Plan dated October 2, 2000. The proposed Excess Fluid Management plan was submitted to meet condition No. 3 of NOV and Order Docket No. UGW2004. The following are our review comments of the above referenced draft post-closure plan submitted by your consultant, JBR Environmental Consultants, Inc. The proposed design in the plan for the leach field does not provide sufficiently detailed design specifications. As such our approval will depend on a further submittal addressing the following:

Design Consideration

1. The plan indicates that the proposed leach field will be designed following design criteria stated under the Utah Administrative Code R315-4-9 (Onsite Wastewater Systems Rule). This rule covers design criteria for systems that generate wastewater flow of less than 5,000 gallons per day (gpd). In the proposed design, the design flow rate is assumed to be 10 gpm, which exceed the 5000gpd flow limit stated in the rule. Please refer to the design criteria listed under UAC R317-5-3.2, Administrative Rules For Large Underground Wastewater Disposal Systems, for wastewater systems generating flow that exceed 5,000 gpd. A copy of this rule is enclosed for your reference.
2. You reported the results of two percolation tests performed at the proposed leach field site. We have reviewed the results in accordance with UAC R317-5 requirements. We believe that the two tests do not provide sufficient information to evaluate the entire site for absorption suitability.

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Therefore, to better evaluate the absorption capability of the soil, we are requesting that additional percolation tests, minimum of three tests, be conducted at the proposed site and analysis be submitted to DWQ.

3. It was stated in the plan that the draindown fluid may be pretreated to reduce the concentration of cyanide prior to discharging the fluid into the proposed leach field. No details on the pretreatment have been submitted. If pretreatment of cyanide is considered, please submit information on type of pretreatment technology, process evaluation and estimation of the anticipated cyanide removal.
4. The plan is indeterminate on assessing the long-term impacts of the proposed operation to the waters of the State. As we indicated in our previous correspondence dated May 15, 2000, disposal of excess water utilizing leach field will be feasible only if the assessment can conservatively demonstrate minimal risk to groundwater. The assessment may include demonstration of the natural attenuation capacity of the soil and site specific fate and transport analysis of constituents in the soil, of particular concerns of constituent are cyanide, nitrate+nitrite and major metals. Please submit an assessment of the potential impacts of the proposed leach field operation to the ground water quality.

#### System Sizing

1. The leach field shall be designed conservatively, using low hydraulic loading rates and largest estimated volume to extend the infiltration capability of the field and to avoid surging of water in the surface of the leach field.

#### System Design

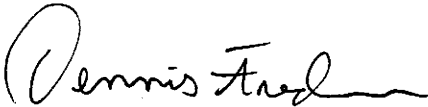
1. The proposed design indicate that fluid will be applied to the leach field via pumping from the pregnant pond and subsequently pumping directly from the heap leach pad through a pipeline. This approach would require a continuous 24-hour per day operation and oversight of the pumping and piping systems. We feel that a passive system, in which fluid will be flowing to the leach field by gravity, would be a better design since it will minimize the cost of operation and maintenance.
2. You state that it may not be possible to determine the draindown fluid rate until the vegetative cover for the heap is established. We understand that adequate long-term vegetative growth must established and maintained in accordance with the Division of Oil, Gas and Mining reclamation requirements to close the heap leach pad. We agree that placing the vegetation cover on the heap pad would increase the evapotranspiration which eventually optimize moisture reduction. However, we feel that the vegetation cover would not significantly affect the draindown flow to the point that it should preclude estimation of the anticipated design flow rate.

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3. Please submit the final plans and specifications for the proposed leach field design incorporating details of and temporary pumping system and pipe sizing.

Please address the above issues in the final post-closure fluid management plan. If you have any questions, please contact Beth Wondimu of this office at (801) 538-6084.

Sincerely,



Dennis Frederick, P.E., Manager  
Ground Water Protection Section

DF:BW:bjr

Enclosure (1)

cc: ~~Wayne Hedberg, Utah Division of Oil, Gas and Mining~~ (w/o enclosure)  
Robert J. Bayer, JBR Consulting, Inc. (w/ enclosure)

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